

IN THE CLAIMS:

Please amend Claims 1 and 3, and add new Claims 17-21, to read as follows.

1. (Currently Amended) A radiation image sensing apparatus comprising:

c1  
an image sensing unit which is capable of nondestructively reading and includes a plurality of pixel portions for sensing senses an object image by ~~converting the object image on the basis of passing~~ radiation from a radiation source passing through an object ~~into an electric signal~~; and

a drive circuit which drives said image sensing unit so that a first signal which is obtained by resetting said plurality of pixel portions is read out nondestructively from said image sensing unit, thereafter a signal is read out nondestructively a plurality of times from said image sensing unit without resetting, and subsequently a second signal is read out nondestructively from said image sensing unit without resetting said plurality of pixel portions;

a differential circuit which effects differential operation of the first signal and the second signal; and

a control circuit which ~~stops~~ effects control to stop emission of radiation from the radiation source on the basis of a signal ~~obtained by non-destructively reading the electric signal read out from said image sensing unit during sensing of the object image by said image sensing unit~~ drive circuit.

2. (Previously Presented) An apparatus according to claim 1, further comprising a switching circuit which switches reading modes of said image sensing unit, said switching

circuit switching the reading mode of said image sensing unit to a non-destructive reading mode in the image sensing operation.

C1 Cont  
3. (Currently Amended) An apparatus according to claim 1, wherein ~~said image sensing unit includes a~~ the pixel portion including includes a photoelectric conversion element and a reading transistor, the photoelectric conversion element of the pixel portion being connected to a control terminal of the reading transistor.

4. (Original) An apparatus according to claim 3, wherein a load is connected to one main electrode terminal of the reading transistor, and the transistor is formed by an amplifier having a voltage amplification factor of substantially 1.

5. (Original) An apparatus according to claim 4, wherein the load is a constant current source or a resistor.

6. (Previously Presented) An apparatus according to claim 3, wherein a switching transistor which selects a pixel portion in a row direction is connected in series with the reading transistor.

7. (Original) An apparatus according to claim 3, wherein a reset transistor is connected in series with the photoelectric conversion element, and the reset transistor is

controlled in accordance with a mode switching signal to switch the reading mode to a normal reading mode or a non-destructive reading mode.

C1 Cont.  
8. (Previously Presented) An apparatus according to claim 1, wherein said control circuit comprises a pattern recognizing circuit which performs pattern recognition on the basis of an output from said image sensing unit, a detection circuit which detects a radiation amount on the basis of the pattern recognition result obtained by the pattern recognizing circuit, and a generation circuit which generates a reference value for a most appropriate radiation amount on the basis of the pattern recognition result obtained by the pattern recognizing circuit.

9. (Original) An apparatus according to claim 8, wherein said reference value is generated for a most appropriate radiation amount on the basis of the pattern recognition result obtained by the pattern recognizing circuit.

10. (Original) An apparatus according to claim 8, wherein said control circuit detects a radiation amount by using the detection circuit while performing non-destructive reading from said image sensing unit in the image sensing operation, and stops emission of radiation from the radiation source when the radiation amount becomes not less than the reference value.

11. (Original) An apparatus according to claim 8, wherein said control circuit detects a most appropriate image sensing time while performing non-destructive reading from

said image sensing unit in the image sensing operation, and stops emission of radiation from the radiation source when the image sensing time reaches the most appropriate image sensing time.

2.1 Cont.  
12. (Previously Presented) An apparatus according to claim 8, wherein said control circuit includes an addition circuit which adds outputs from said image sensing unit.

13. (Original) An apparatus according to claim 12, wherein the addition circuit performs weighted addition based on a reference pattern.

14. (Original) An apparatus according to claim 13, wherein the reference pattern is generated on the basis of the pattern recognition result.

15. (Previously Presented) An apparatus according to claim 1, further comprising a difference circuit which obtains a radiation image sensing output by subtracting an output from said image sensing unit which is obtained before emission of radiation from an output from said image sensing unit which is obtained after emission of radiation from the radiation source is stopped.

16. (Previously Presented) An image sensing method for a radiation image sensing apparatus including an image sensing unit which senses an object image by converting the object image on the basis of radiation from a radiation source passing through an object into an electric signal, comprising the step of stopping emission of radiation from the radiation source

C1 on the basis of a signal obtained by non-destructively reading the electric signal from the image sensing unit during sensing of the object image by the image sensing unit.

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C2 17. (New) An apparatus according to claim 1, wherein the first signal is read out after said plurality of pixel portions are reset in a time period from a time when a sensing start switch for driving the radiation source is turned on to a time when the emission of the radiation starts.

18. (New) A radiation image sensing apparatus comprising:

an image sensing unit which is capable of nondestructively reading and includes a plurality of pixel portions for sensing an object image by passing radiation from a radiation source through an object;

a drive circuit which drives said image sensing unit so that a first signal which is obtained by resetting said plurality of pixel portions is read out nondestructively from said image sensing unit, thereafter a signal is read out nondestructively a plurality of times from said image sensing unit without resetting, and subsequently a second signal is read out nondestructively from said image sensing unit without resetting said plurality of pixel portions;

a differential circuit which effects differential operation of the first signal and the second signal;

a control circuit which stops emission of the radiation from the radiation source by comparing with a reference level a signal level of a signal which is obtained by reading out an electric signal nondestructively from said image sensing unit during sensing of the object image

by said image sensing unit, wherein said control circuit changes the reference level in accordance with the object.

19. (New) An apparatus according to claim 18, wherein said control circuit detects object information from the signal obtained by reading out the electric signal nondestructively from said image sensing unit, and changes the reference level on the bases of the detected object information in accordance with the object.

20. (New) An apparatus according to claim 18, wherein the signal obtained by reading out the electric signal nondestructively from said image sensing unit is also a signal which is read out from said image sensing unit through thinning-out read-out.

21. (New) An apparatus according to claim 18, wherein the signal obtained by reading out the electric signal nondestructively from said image sensing unit is also a signal which is read out from said image sensing unit through addition thereof.

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